



CENTER FOR RESEARCH AND TECHNOLOGY DEVELOPMENT (CRTD) Established 1985

Mission

- Effectively plan and manage the collaborative research activities of ASME to meet the needs of the mechanical engineering profession as defined by the ASME members

CRTD Roles

- CRTD facilitates the collaboration between industry, government, and academia needed to address critical national and global issues that require mechanical engineering expertise.
- CRTD supports research efforts that meet the needs identified by today's mechanical engineering professionals.
- CRTD helps to advance the technologies and processes that will ensure safe and sustainable development now and in the future.

Vision

- To be recognized as providing timely, credible, accurate products of value to members/customers

*Member Driven Research Projects – Over 400 Participants
A Member Service*

- Officer: Richard Jacobsen, Ph.D.
Chair, Board on Research & Technology Development
- CRTD Staff: Director: Michael Tinkleman, Ph.D., TinklemanM@asme.org 202-785-7394
Manager: Norma Johnston, JohnstonN@asme.org 202-785-7395

CRTD Background

- CRTD established in 1985 to coordinate ASME's Research Program
- CRTD recognized as both a Member Service & a Value of ASME Membership.
- Over 400 Participants.
- Member Driven Research Projects
- 12 Research Committees
- 1 Ad-Hoc Research Committee (Bio-Energy) (CRTD Incubator Role)
- Ability to Leverage Depth & Breadth of ASME member Knowledge in Research Projects

Core Competencies: - "What we are uniquely good at"

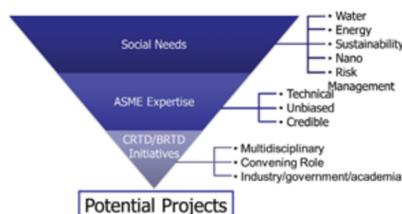
CRTD Strengths

- Neutral Party/Facilitator – Bring Diverse Parties to the Table
- Development of ASME Cross Sector Teams
- Leverage Breadth and Depth of ASME Member's Knowledge
- Knowledge of Federal R&D Activities.
- Strong Federal Sector, Industry, Association Contacts

CRTD Products & Services

- Conduct pre-competitive, collaborative research projects
- Vision and roadmap workshops
- Industry best practices
- Peer and program reviews
- Research needs /gaps identification workshops
- Industry relevant handbooks

CRTD New Project Process



Opportunities for Collaboration

- Opportunity for a Technical Division, Institute, or a Section to collaborate with CRTD to:
 - Develop Collaboratively Sponsored Research Projects with Government & Industry Support
 - Develop a Federal Government or Industry sponsored Workshop
 - Develop an R&D Vision or an R&D Technology Roadmap in their area of Interest
 - Assist in the implementation of one of the top priority project opportunities from the ASME Energy Grand Challenge Roadmap and Water Management Technology Roadmap Workshops

Research and Ad Hoc Committees

Research Committee on

- Corrosion & Deposits from Combustion Gases • Gas Pipeline Safety • Energy, Environment, and Waste (formerly Industrial & Municipal Waste) • Mechanics of Jointed Structures • Nanomanufacturing Technology • Power Plant & Environmental Chemistry • Radiation (X-Ray) Technologies • Risk Technology • Sustainable Products and Processes • Water & Steam in Thermal Systems • Water Management Technology
- Ad Hoc Committee on BioEnergy

Peer Review Committees

- Advanced Integrated Gasification and Combined Cycle Peer Review Committee
- Advanced Turbine Peer Review Committee
- Carbon Sequestration Peer Review Committee
- Fuels Peer Review Committee
- Fuel Cell Peer Review Committee
- Peer Review Committee for Energy and the Environment

Select Publications

- ASME Energy Grand Challenge Roadmap
- ASME Water Management Technology Best Management Practices and Innovations for the Process Industries Workshop
- Application Guide for Determining Yield Strength of In-Service Pipe by Evaluating Hardness
- Steam Tables for Industrial Use
- ASME Water Management Technology Vision and Roadmap
- Repairing Pipelines with Full Encirclement Welded Split Steel Sleeves (DVD)
- Development of Reliability-Based Load and Resistance Factor Design (LRFD) Methods for Piping: Research & Development Report
- Risk-Based Methods for Equipment Life Management: A Step-by-Step Instruction Manual with Sample Applications
- Consensus Document for Operating Practices for the Sampling and Monitoring of Feedwater and Boiler Water Chemistry in Modern Industrial Boilers
- Reference Method Accuracy and Precision (ReMAP): Phase 1 - Precision of Manual Stack Emission Measurements
- Six volume series on Guidelines for Risk Based In-Service Inspection (ISI) and In-Service Testing (IST) – Led to a series of Code Cases that has risk-informed sections of the ASME Boiler Code.

New Research Projects

- Series of Best Management Practices Workshops on Industrial Water Reuse
- Amine Use in Steam Turbines
- Field Testing of the Application Guide for Determining Yield Strength of In-Service Pipe by Evaluating Hardness
- Consensus Documents on
 - Pre-commissioning of Co-Generation and Combined Cycle Power Plants
 - Heat Recovery Steam Generator Water Quality Guidelines
 - Produced Water for Enhanced Oil Recovery Steam Generating Systems

Sample of Recently Completed Projects

- ASME Water Management Technology Best Management Practices for the Process Industries Workshop
- ASME Sustainable Products and Processes Strategic Plan
- ASME Energy Grand Challenge Vision and Roadmap Workshop (cross-sector effort led by CRTD)
- ASME Water Management Technology Vision and Roadmap Workshop
- Application Guide for Determining Yield Strength of In-Service Pipe by Evaluating Hardness
- Training Video on Permanent Pipeline Repairs Using Welded Steel Sleeves
- Peer Review of DOE/NETL Research Programs on:
 - Carbon Sequestration
 - Advanced IGCCs
 - Advanced Turbines
 - Solid Oxide Fuels Cells
 - Fuels (Hydrogen/Syngas)
 - Advanced Power Systems Program
- Program Review of the DOE Industrial Technologies Program
- Power Plant & Environmental Chemistry Workshops (2 ½ days each). Held semiannually in Fall and Spring.
- Development of Reliability-Based Load and Resistance Factor Design Methods for Piping: Research & Development Report (Proof of Concept)
- Provided financial and contract management support to the ASME Innovative Technologies Institute (ITI) LLC for U.S. Department of Homeland Security Project on development of Sector-Specific Risk Guidance Documents.
- CRTD Director served as Team Leader for Cross Sector Teams such as ASME Energy Grand Challenge and the Water Management Technology Vision and Roadmaps